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TELEVISION AT THE NINTH SOVIET RADIO EXHIBITION

L. Troytskiy

The exhibits in the television section of the Ninth Radio Exhibition were extremely varied. There were television receivers employing few tubes, radio-phonotelevision combinations, a wired television center, portable television sets, a projection-type television receiver, and even an amateur television center.

The amateur television center, built by a group of designers in the Khar'kov Dosarm Radio Club, under the direction of V. S. Vovchenko, is designed for film transmission. Tests showed that the picture quality was entirely satisfactory. The center has a range of 20 km.

Khar'kov was also represented by a video-signal transmitter, designed by V. Yu. Ryazantsev and A. A. Tokarev, and by a portable set for transmissions from theaters, stadiums, etc., designed by V. M. Stolyarov.

A portable television receiver with a projection tube capable of serving an audience of 20-30 persons was built by D. A. Budogovskiy of the Leningrad Radio Club. The equipment comes in two cabinets. One cabinet contains a matte screen on which the picture is projected from an LK-100 tube. The set uses 6AZh5 and 6N15P miniature tubes. The video-signal receiver (straight amplification circuit), scanning units, the cathode-ray tube with its associated optical system, and the rectifier supplying the output tubes of the scanning units are placed in one cabinet. In the other cabinet are assembled the superheterodyne receiver for sound accompaniment and the power pack.

A wired television center was exhibited by a group of designers from the Leningrad Radio Club, headed by L. I. Baldin. Its block diagram is shown in the appended figure. In this diagram, 1 is the master television receiver, 2 is a two-tube linear amplifier, and L is a three-wire line with the middle one for video-signal transmission, the right one for sound signals and the left one, a common return for both. The line should not be over 200 m long. R is the

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matching resistance connected in at the end of the line; l_1, l_2, and l_3 are branches to receiving units (length not over 15 m); and T_1, T_2, and T_3 are receiving units. A receiving unit consists of a kinescope, loudspeaker, scanning unit, and rectifier. The receiving unit operates on only five tubes.

An outstanding example of the large-tube television receiver designs shown at the exhibit is the TP-3, built by V. B. Prutkovskiy, Leningrad Radio Club. A 31LK1B (30LK1B) kinescope is used in it. The receivers are of the superheterodyne type. In designing his receiver, Prutkovskiy paid particular attention to reducing interference in the sychronization system; automatic-frequency control was used in the line-scanning unit, and the frame-scanning unit has amplified synchronization.

K. I. Samoylikov, Noginsk, Moscow Oblast, exhibited a portable television set for long-distance television reception which had been seen by over 6,000 persons in 57 primary Dosarm organizations. For convenience in handling, the portable receiver comes in separate units. The sound receiver, with its rectifier, is mounted in a separate case. This receiver has an rf amplification stage, converter, two i-f amplification stages, phase detector, and two af amplification stages. The frequency range covered by the receiver includes the band used by the video-signal transmitter (for frame-synchronizing signals), which makes it possible to determine the quality of picture reception at a particular point without carrying the whole receiver around. The picture receiver also uses a superheterodyne circuit.

Of the many radiophonotelevision combinations exhibited, those designed by N. N. Zhdanov, Central Radio Club, and V. I. Padalko, Leningrad Radio Club, deserve special mention.

Zhdanov's set consists of a television receiver (using superheterodyne sound and picture circuits) with an 18LK15 (LK-715A) kinescope, a first-class broadcast receiver, and a record player. The type of operation, i.e., radio television or record player, is selected by relay.

Padalko's combination also uses an 18LK15 kinescope. A lens is used in front of the tube to enlarge the picture. The television section is mounted in the upper part of the cabinet and the broadcast receiver in the lower part. Beneath the latter are the record player (on a sliding panel), the loudspeaker, and a section for records. A total of 24 tubes are used in the combination, 17 in the television receiver and seven in the broadcast receiver.

In the group of television receivers employing few tubes, L. I. Baldin's (Central Radio Club) 11-tube set, the TM-3 is noteworthy. Amateurs preparing to build television sets will find it practical. The video-signal receiver has only three tubes: the two rf amplification stages are followed by a 6N7 grid detector and video-signal amplifier. In the sound receiver, the converter is followed by a regenerative detector (1/2 6N8S) and two af stages. Parts from a KVN-49 television receiver are used extensively in the frame- and line-scanning units.

The video-signal receiver in the ten-tube television set exhibited by A. Yu. Samm Leningrad Radio Club, uses a straight amplification circuit. The first stage (1/2 6N8S) is a grounded-grid amplifier. The second stage (1/2 6N8S) is a cathode-loaded amplifier; the third and fourth stages use 6AC7s with identical circuits. Next come a crystal detector and the 6P9 (6AG7) video-signal amplifier.

The first television set built in Leningrad by a group of young television amateurs was the Pioneer LDP-1 built in the Leningrad Palace of Pioneers imeni Zhdanov (director, I. M. Zavgorodnev). The video-signal receiver uses a straight amplification circuit (2-V-1) with a plate detector.

POLISH RADIO TO COOPERATE WITH BULGARIA, GDR -- Warsaw, Radio, Vol V, No 6, Jun 50

Toward the end of June 1950, a delegation from Polish Radio, headed by Wilhelm Billig, chairman of the CUR, arrived in Sofia to sign the 1950 - 1951 agreement on cooperation between radiofication systems of Poland and Bulgaria. Director Mikolov signed for Bulgaria.

In mid-May 1950, a delegation from Polish Radio attended a radio conference in Berlin to discuss cooperation between the radiofication systems of Poland and the German Democratic Republic. A delegation of German Democratic Republic officials headed by Ulbricht arrived in Warsaw on 5 June to sign the protocol on cultural cooperation to facilitate an exchange of scientific information and cooperation in the radio field. Toward the end of June, a delegation from the German Democratic Republic Radio visited Polish Radio to sign the agreement covering cultural and technical cooperation in the radio field.

STAGE SHORT-WAVE EXHIBIT -- Warsaw, Radio, Vol V, No 7, Jul 50

At the end of July 1950, a merger took place, uniting the TPZ (Towarzystwo Przyjaciol Zolnierza, Society of Friends of Servicemen), Towarzystwo Przyjacio ORMO (Society of Friends of Volunteer Reserves of the Citizens' Militia), and Zwiazek Krotkofalowcow (Union of Short-Wave Radio Amateurs) into one new organization, the Liga Przyjaciol Zolnierza (League of Friends of Servicemen). On the occasion of the merger congress, an exhibit showing 5 years' progress of these organizations was organized in Warsaw.

One room was devoted to Polish achievements in short-wave radio. Exhibits built by short-wave radio amateurs included receiving sets (crystal, various converter types, and multitube superheterodyne), amplifiers, measuring instruments, scale models of antennas, microphones, and short-wave and ultrashort-wave transmitters. During the exhibition, scores of radio contacts were demonstrated over the short-wave station 100 W in the 20-meter band with short-wave operators in Europe, Brazil, New Zealand, and Australia.

Polish short-wave radio amateurs are cooperating closely with Soviet and Czech short-wave radio amateurs.

BUILD NEW RADIO BROADCASTING STATION IN KRAKOW -- Warsaw, Radio, Vol V, No 6, Jun 50

Krakow's new broadcasting station, with a volume of 12,300 cubic meters, has just been completed and will house broadcasting studios and offices.

Warsaw, Radio, Vol V, No 7, Jul 50

The new radio broadcasting station in Krakow was officially opened on 22 July 1950. It was built entirely according to Polish engineering designs, based on the latest findings of Soviet radio technology. The Electroacoustics Division of Polish Radio In Warsaw designed the broadcasting equipment under the direction of Engr Aleksander Janik. The equipment was built by Centralne Warsztaty Polskiego Radia (Central Workshops of Polish Radio) in Warsaw.

The broadcasting station is located at the newly reconstructed Tarnowski Palace. It has six studios, besides rehearsal rooms, control rooms, amplifying rooms, offices, etc. In the near future, there will be an amphitheater next to the building for open-air broadcasts. This will have a seating capacity of 600 and the stage will accommodate 300 persons.